

2018 ANNUAL COMPLIANCE REPORT

2018 NPDES Annual Compliance Report

Prepared for:

Barnhardt Manufacturing

NPDES Permit No. MA0003697



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2018 NPDES Annual Compliance Report

The Barnhardt Manufacturing NPDES Permit No. MA0003697 provides a three-year schedule for compliance with limits for phosphorus, copper, and toxicity. This report details progress toward meeting these limits for the calendar year 2018.

Phosphorus

Currently, Barnhardt is required to only report effluent total phosphorus concentrations. However, the seasonal limit of 1.26 mg/L for May through October will be in effect at the end of the compliance period.

Influent and effluent total phosphorus (TP) concentrations reported for 2018 are shown in Figure 1. Data used are shown in Appendix A. The average influent TP concentration was 4.75 mg/L and the average effluent concentration was 3.10 mg/L. Effluent TP and orthophosphate (PO_4) concentrations are shown in Figure 2. On average, the effluent PO_4 concentration was 81% of the TP.

During 2018, baseline data were collected for influent and effluent total phosphorus and orthophosphate. Given the high percentage of PO_4 , it is likely that phosphorus can be removed using inorganic coagulants such as alum.

Figure 1. Influent and Effluent Total Phosphorus Concentrations

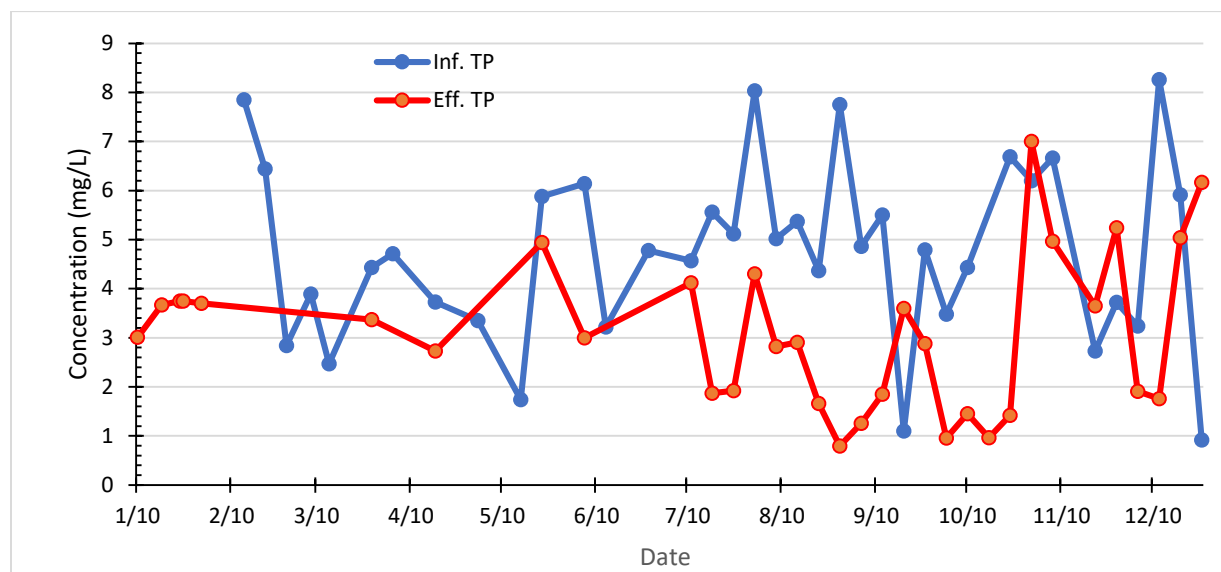
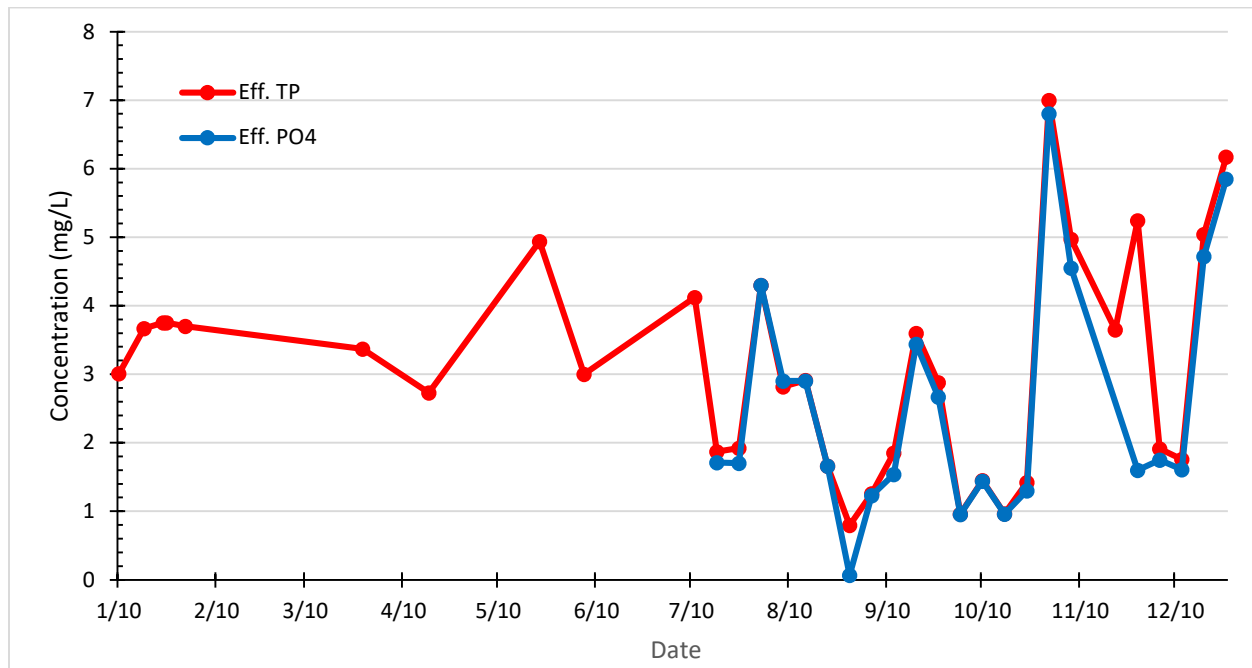


Figure 2. Effluent Total Phosphorus and Orthophosphate Concentrations

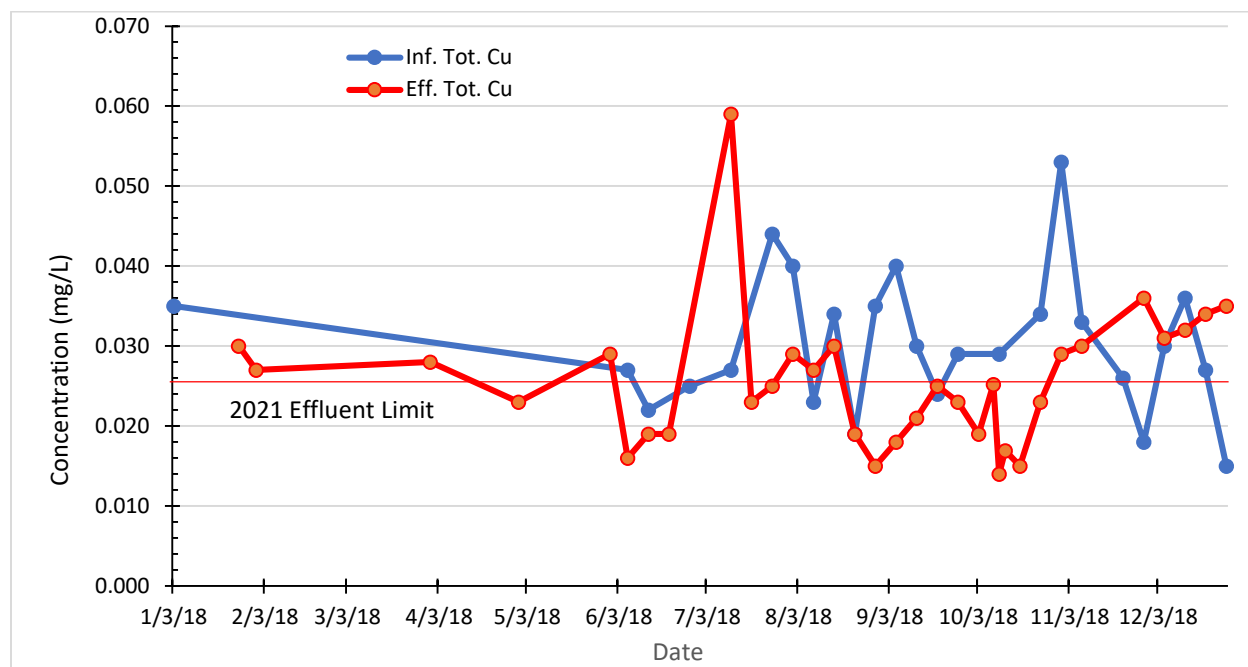


Copper

Currently, Barnhardt is required to only report effluent total copper (Cu) concentrations. However, the limit of 22 µg/L will be in effect at the end of the compliance period. Influent and effluent total copper concentrations are shown in Figure 3. These data were collected for monitoring purposes and are shown in Appendix B. The average influent Cu concentration was 31 µg/L and the average effluent concentration was 26 µg/L. The average effluent concentration exceeded the 2021 effluent limit.

In December 2018, the Quality Assurance Project Plan (QAPP) was submitted to MassDEP for conducting water quality monitoring to be used in a Biotic Ligand Model (BLM) to further assess the site-specific copper criteria used to establish the Barnhardt permit limit. Sampling was begun in May 2019.

Figure 3. Influent and Effluent Total Copper Concentrations



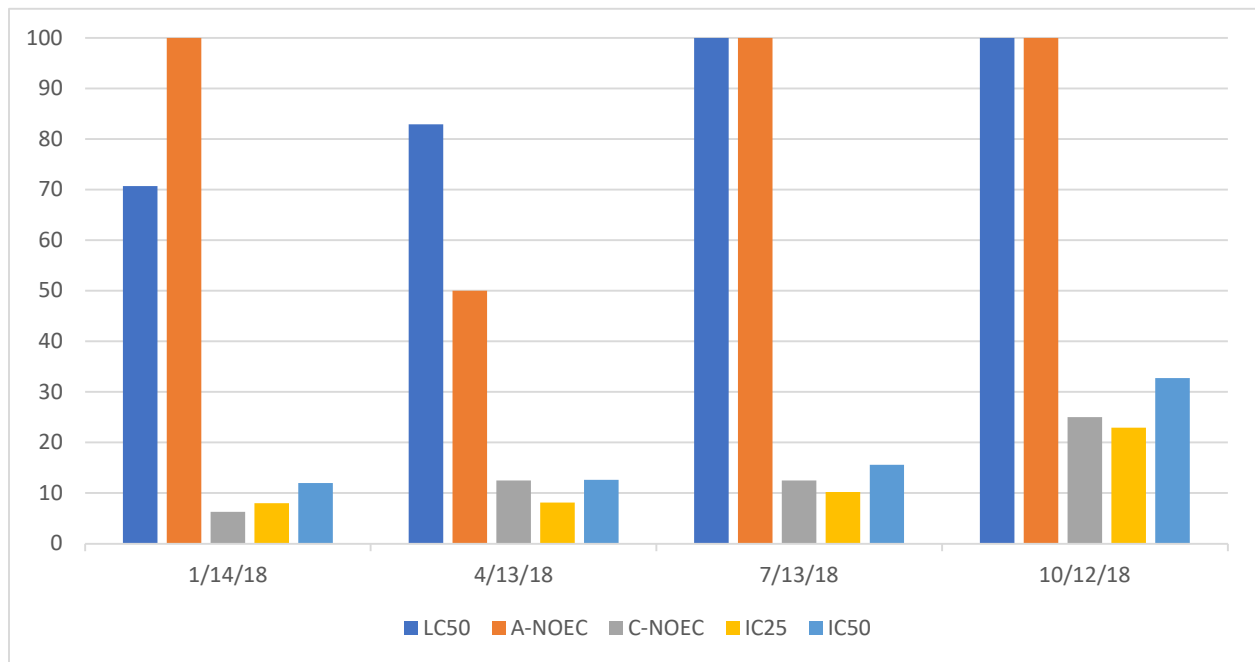
Toxicity

Currently, the permit limit for acute toxicity is an LC_{50} of >100%, and for chronic toxicity the limit is a No Observed Effect Concentration (C-NOEC) of >5%. At the end of the compliance period, the C-NOEC becomes more restrictive with a limit of >7.2%. The 2018 test results are shown in Table 1 and Figure 4.

Table 1. 2018 Toxicity Test Results

	LC50	A-NOEC	C-NOEC	IC25	IC50
Permit Limits:	>100%		>5%		
Date					
1/14/18	70.7	100	6.25	8	12
4/13/18	82.9	50	12.5	8.1	12.6
7/13/18	100	100	12.5	10.2	15.6
10/12/18	100	100	25	22.9	32.7

Figure 4. 2018 Toxicity Test Results



Acute toxicity levels exceeded (were more toxic) the permit limit during January and April quarters and, the chronic toxicity limit was not exceeded. IC₂₅ values are consistent with the C-NOEC values. However, the 2021 pending chronic limit of 7.2% was exceeded for the January quarter.

Work will be done in 2019 to investigate the cause(s) of toxicity.

Conclusion

In conclusion, baseline data were collected during 2018. More detailed work will be done in 2019 to evaluate the steps necessary to be in compliance with 2021 pending limits for phosphorous, copper and toxicity.

Appendix A. 2019 Phosphorus Data

SampleDate	Inf. TP	Eff. TP	Inf. PO4	Eff. PO4
1/10/2018		3.01		
1/18/2018		3.67		
1/24/2018		3.75		
1/25/2018		3.75		
1/31/2018		3.7		
2/14/2018	7.85			
2/21/2018	6.44			
2/28/2018	2.84			
3/8/2018	3.89			
3/14/2018	2.47			
3/28/2018	4.43	3.37		
4/4/2018	4.71			
4/18/2018	3.73	2.73		
5/2/2018	3.35			
5/16/2018	1.74			
5/23/2018	5.88	4.94		
6/6/2018	6.14	3		
6/13/2018	3.22		1.98	
6/27/2018	4.78		3.01	
7/11/2018	4.57	4.12	3.01	
7/18/2018	5.56	1.87	3.94	1.71
7/25/2018	5.12	1.92	3.49	1.7
8/1/2018	8.03	4.3	5.75	4.3
8/8/2018	5.02	2.82	3.51	2.9
8/15/2018	5.37	2.91	3.37	2.9
8/22/2018	4.37	1.66	3.15	1.66
8/29/2018	7.75	0.796		0.0695
9/5/2018	4.86	1.26	2.7	1.23
9/12/2018	5.5	1.85	3.37	1.54
9/19/2018	1.1	3.6	0.489	3.44
9/26/2018	4.79	2.88	3.74	2.67
10/3/2018	3.48	0.959	2.14	0.956
10/10/2018	4.43	1.45	2.47	1.44
10/17/2018		0.962		0.96
10/24/2018	6.69	1.42	4.2	1.3
10/31/2018	6.2	7	3.96	6.8
11/7/2018	6.66	4.97	4.87	4.55

Sample Date	Inf. TP	Eff. TP	Inf. PO4	Eff. PO4
11/21/2018	2.73	3.65	1.23	
11/28/2018	3.72	5.24	2.34	1.6
12/5/2018	3.24	1.91	1.99	1.75
12/12/2018	8.26	1.76	5.7	1.61
12/19/2018	5.91	5.04	3.98	4.72
12/26/2018	0.918	6.17	0.526	5.85
Average	4.75	3.10	3.12	2.53
Max.	8.26	7.00	5.75	6.80
Min.	0.92	0.80	0.49	0.07
% of Total				81%

Appendix B. Influent and Effluent Copper Data

SampleDate	Inf. Tot. Cu	Eff. Tot. Cu	Eff. Sol. Cu
1/3/2018	0.035		
1/25/2018		0.03	
1/31/2018		0.027	
3/31/2018		0.028	
4/30/2018		0.023	
5/31/2018		0.029	
6/6/2018	0.027	0.016	
6/13/2018	0.022	0.019	
6/20/2018		0.019	0.019
6/27/2018	0.025		
7/11/2018	0.027	0.059	0.025
7/18/2018		0.023	0.022
7/25/2018	0.044	0.025	0.026
8/1/2018	0.04	0.029	
8/8/2018	0.023	0.027	
8/15/2018	0.034	0.03	
8/22/2018	0.019	0.019	
8/29/2018	0.035	0.015	
9/5/2018	0.04	0.018	
9/12/2018	0.03	0.021	
9/19/2018	0.024	0.025	
9/26/2018	0.029	0.023	
10/3/2018		0.019	
10/8/2018		0.0252	
10/10/2018	0.029	0.014	
10/12/2018		0.0169	
10/17/2018		0.015	
10/24/2018	0.034	0.023	
10/31/2018	0.053	0.029	
11/7/2018	0.033	0.030	
11/21/2018	0.026		
11/28/2018	0.018	0.036	
12/5/2018	0.03	0.031	
12/12/2018	0.036	0.032	
12/19/2018	0.027	0.034	
12/26/2018	0.015	0.035	

SampleDate	Inf. Tot. Cu	Eff. Tot. Cu	Eff. Sol. Cu
Average	0.030	0.026	0.023
Max.	0.053	0.059	0.026
Min.	0.015	0.014	0.019

REVISED DECEMBER 2018 DMR

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NetDMR has received the following 1 DMR(s) during the signing process.

CORs have been created for the following DMRs. These DMRs will be forwarded for further processing:

Permitted Facility Name: BARNHARDT MANUFACTURING CO
Permit ID: MA0003697
Permitted Feature: 001
Discharge: A - TREATED WASTEWATER OUTFALL 001
Monitoring Period End Date: 12/31/18
Signing Status: SIGNED SUCCESSFULLY
Comment:
Attachments included in the COR: Yes

Monthly_calculated_parameter_worksheet_July_2018.xls
December_1_2_2018.xls
2018_OEP_Letter.pdf
December_24_30_2018.pdf
December_17_23_2018.xls
December_10_16_2018.pdf
Gris_Production_12_2018.xlsx
December_3_9_2018.xls
2018_Revised_DMR_Nitrogen_Removal_Annual_Compliance_Report.pdf
December_31_2018.xls
Cover_Letter_12_18_Mthly.doc
NPDES_December_2018.pdf
NPDES_December_bi_monthly.pdf

Thank you.

For information on the CDX/NetDMR migration process for individuals with an existing NetDMR account please see the following link <https://netdmr.zendesk.com/hc/en-us/articles/115002191163-NetDMR-to-CDX-Move-Walkthrough-Document>. Individuals with migration issues should contact NPDESReporting@epa.gov or 877-227-8965. Questions about CDX should be directed to the CDX Help Desk 888-890-1995. Question about NetDMR can be sent to EPA Region 1 at R1.NetDMR@epa.gov.



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June 2, 2020

U.S. Environmental Protection Agency
Office of Ecosystem Protection
EPA/OEP NPDES Applications Coordinator
5 Post Office Square – Suite 100 (OEP06-03)
Boston, MA 02109-3912

Submitted Electronically to: R1NPDES.Notices.OEP@epa.gov

**Re: Revised 2019 Discharge Monitoring Report
Barnhardt Manufacturing Co.
247 Main Road
Colrain, MA**

To Whom it May Concern:

Barnhardt Manufacturing Company (BMC), is providing this cover letter in response to the United States Environmental Protection Agency's (USEPA) May 13, 2020 "Request for Information Pursuant to Section 308 of the Clean Water Act and Section 114(a)(1) of the Clean Air Act, EPA Docket No. CWA-308-R01-FY20-60."

USEPA's records indicate that BMC was not in compliance with the following reporting requirements under National Pollutant Discharge Elimination System (NPDES) Permit No. MA0003697 Parts I.B and I.C.:

- The December 2019 Discharge Monitoring Report (DMR) did not include the Nitrogen Removal Optimization Annual Report for 2019, due on January 15, 2020; and
- The December 2019 DMR did not include the Compliance Schedule Annual Report for 2019 due on January 15, 2020.

BMC has amended and submitted a revised December 2019 DMR to include the 2019 Nitrogen Removal Optimization report and 2019 Annual Compliance Report. A copy of the 2019 Annual Nitrogen Report, the 2019 Annual Compliance Report and revised December 2019 DMR are included as attachments to this letter and are hereby submitted to the EPA/OEP NPDES Applications Coordinator in the EPA Office Ecosystem Protection (OEP) in accordance with I.C.3 of the NPDES Permit.

All future reporting requirements shall be submitted using NetDMR and/or directly to the NPDES Applications Coordinator in accordance with the requirements set forth under the Permit.

If you have any questions or concerns, please don't hesitate to contact the undersigned.

A handwritten signature in black ink, appearing to read "Tim Mosher", is positioned above the printed name and title.

Tim Mosher
Environmental, Health and Safety Manager
Barnhardt Manufacturing Company

Cc: Tom Robinson, Barnhardt Manufacturing Company, 1100 Hawthorne Ln, Charlotte, NC 28205